

CLAIMS

1. A stabilizer composition for the stabilization of polyethylene-based thermoplastic polymers comprising
 - a) at least one sterically hindered phenol,
 - b) at least one phosphorus-containing secondary antioxidant, and
 - c) at least one tocopherol compoundwherein the weight ratio of component (a) to component (b) is from 2:1 to 1:4 and the weight ratio of component (a) to component (c) is from 2:1 to 10:1.
2. A composition according to claim 1 wherein the weight ratio of component (a) to component (b) is 1:1 and the weight ratio of component (a) to component (c) is 5:1.
3. A composition according to claim 1 or 2 wherein the tocopherol compound is α -tocopherol (5,7,8-Trimethyl-tocol).
4. A composition according to any preceding claim wherein the sterically hindered phenol is 2,2'-Bis[3,5-[3,5-bis(1,1-dimethylethyl)-4-hydroxyphenyl]-1-oxoprop-oxy]methyl-1,3-propanediyl-3,5-bis(1,1-dimethylethyl)-4-hydroxybenzenepro-panoate; Octadecyl-3,5-bis(1,1-dimethylethyl)-4-hydroxybenzenepropanoate; 1,3,5-tris[[3,5-bis(1,1-dimethylethyl)-4-hydroxyphenyl]methyl]1,3,5-triazine-2,4,6(1H,3H,5H)trione; 4,4',4"-[2,4,6-trimethyl-1,3,5-benzenetriyl]tris-(methylene)]tris[2,6-bis(1,1-dimethylethyl)-phenol; Ethanediyl-3,5-bis(1,1-dimethylethyl)-4-hydroxy-thiodi-2,1-benzenepropanoate; 2:1 calcium salt of monoethyl-[[3,5-bis(1,1-dimethylethyl)-4-hydroxyphenyl]-methyl]-phosphonic acid ester; 2-[3-[3,5-bis(1,1-dimethylethyl)-4-hydroxy-phenyl]-1-oxopropyl]-hydrazide-3,5-bis(1,1-dimethylethyl)-4-hydroxy-benzene-propanoic acid; 2,2'-oxamido-bis-[ethyl-3-(3,5-di-tert.-butyl-4-hydroxyphenyl)-propionate] or mixtures thereof.

5. A composition according to any preceding claim wherein the phosphorus-containing secondary antioxidant is Triphenylphosphite, Tris-isodecylphosphite; Tris(nonylphenyl)phosphite; Distearyl pentaerythritol diphosphite; 2,4,6-tri-tert.-butylphenyl-2-butyl-2-ethyl-1,3-propanediol phosphite; Bis(2,4-di-tert.-butylphenyl)-pentaerythritol diphosphite; 2,2',2"-nitrilo triethyl-tris[3,3',5,5'-tetra-tert.-butyl-1,1'-biphenyl-2,2'-diyl]phosphite; Bis[2,4-di-tert.-butyl-6-methyl-phenyl]ethyl phosphite; 2,2'-Ethylidene-bis-(4,6-di-tert.-butylphenyl)fluorophosphite; Tris(2,4-di-tert.-butylphenyl)phosphite; the 4,6-di-tert.-butyl-m-cresol condensation products with the Friedel-Crafts-reaction products of biphenyl and phosphorus trichloride; Tetrakis [2,4-di-tert.-butylphenyl]-4,4'-biphenylenediphosphonite; the condensation products of 2,4-di-tert.-butylphenol with the Friedel-Crafts-reaction product of biphenyl and PCl_3 .

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15 6. A method for enhancing the processing stability of polyethylene-based thermoplastic polymers comprising incorporating therein before or during processing a stabilizing quantity of the stabilizer composition according to claim 1.

20 7. A method according to claim 6 wherein the stabilizer composition is added in an amount of from 0.001 to 5% by weight, preferably from 0.01 to 1% by weight, more preferably from 0.1 to 0.5% by weight, based on the thermoplastic polymer.

25 8. A process for producing a stabilizer composition according to claim 1 comprising mixing the components (a), (b) and (c) in the weight ratios given in claim 1 or

30 9. A masterbatch composition comprising a stabilizer composition according to claim 1 and a thermoplastic material which is identical or compatible with the polyethylene-based thermoplastic polymer to be stabilized.

10. A masterbatch composition according to claim 9 comprising 10 to 80% by weight, preferably 5 to 25% by weight of the stabilizer composition and 90 to 20% by weight, preferably 95 to 75% by weight of said thermoplastic material.
11. A stabilized polyethylene-based thermoplastic polymer and any article manufactured therefrom being stabilized by the incorporation therein of a stabilizing quantity of the stabilizing composition according to claim 1.

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